

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-5 (cancelled)

Claim 6 (currently amended): A cell culture comprising:

a human neural precursor cell line, said cell line comprising a cells containing a recombinant DNA construct comprising a receptor ligand-regulated *c-myc* gene, wherein said cell line at least about 20% of the cell line resists differentiation in media containing a mitogen and is capable of differentiating into neurons upon withdrawal of mitogen.

Claims 7-22 (canceled)

Claim 23 (currently amended): A cell culture comprising mammalian neural precursor cells capable of differentiating into neurons and glia,

wherein the mammalian neural precursor cells comprise a recombinant DNA construct comprising a receptor ligand-regulated *c-myc* gene, and

wherein said neural precursor cells resist differentiation in media containing a mitogen and at least about 20% of said mammalian neural precursor cells are capable of differentiating into neurons upon withdrawal of mitogen.

Claim 24 (previously presented): The cell culture of claim 23, wherein the mammalian neural precursor cells are derived from a human.

Claim 25 (previously presented): The cell culture of claim 23, wherein the mammalian neural precursor cells are derived from pluripotent embryonic stem cells.

Claim 26-30 (cancelled)

Claim 31 (currently amended): A cell culture comprising a cell line of mammalian neural precursor cells, produced by:

(a) culturing the neural precursor cells in a serum-free medium and in the presence of a first mitogen, wherein said first mitogen is selected from the group consisting of aFGF, bFGF, EGF, TGF α and combinations thereof;

(b) introducing a *c-myc* construct into the cells, wherein the *c-myc* construct includes ~~at least a portion of a~~ *c-myc* DNA fused with DNA encoding ~~at least a portion of a~~ ligand binding domain; and

(c) further culturing the cells in a medium containing the first mitogen and a second mitogen,

wherein said second mitogen is selected from the group consisting of aFGF, bFGF, EGF, TGF α , serum and combinations thereof, ~~and~~

wherein said medium containing the first mitogen and the second mitogen further comprises a *c-myc*-activating agent capable of binding to the ligand-binding domain, and wherein the neural precursor cells resist differentiation in media containing a mitogen.

Claim 32 (previously presented): The cell culture of claim 31, wherein the mammalian neural precursor cells are derived from a human.

Claim 33 (previously presented): The cell culture of claim 31, wherein the mammalian neural precursor cells are derived from pluripotent embryonic stem cells.

Claim 34 (previously presented): The cell culture of claim 31, wherein the cells maintain a multipotential capacity to differentiate into neurons and glia.

Claim 35 (previously presented): The cell culture of claim 31, wherein the cells maintain a bipotential capacity to differentiate into neurons and astrocytes.

Claim 36 - 38 (canceled)

Claim 39 (previously presented): The cell culture of Claim 31, wherein the culture includes a monolayer component.

Claim 40 (previously presented): The cell culture of claim 31, wherein the second mitogen is different from the first mitogen.

Claim 41 (previously presented): The cell culture of claim 31, wherein the neural precursor cells are derived from central nervous system tissue.

Claim 42 (currently amended): The cell culture of claim 41, wherein the central nervous system tissue is selected from the group consisting of hippocampus, cerebral cortex, striatum, septum, ~~diencephalon, mesencephalon,~~ hindbrain, and spinal cord

Claim 43 (previously presented): The cell culture of claim 31, wherein the nuclear receptor is selected from the group of receptors consisting of an estrogen receptor, an androgen receptor, a progesterone receptor, a glucocorticoid receptor, a thyroid hormone receptor, a retinoid receptor, and an ecdysone receptor

Claim 44 (currently amended): The cell culture of Claim 6, which includes a clonal cell culture line.

Claim 45 (canceled):

Claim 46 (currently amended): The cell culture of Claim 23, which includes a clonal cell culture line.

Claim 47 (canceled):

Claim 48 (previously presented): The cell culture of Claim 23, wherein the recombinant DNA construct includes a *c-myc* DNA fused with at least one element comprising DNA for a ligand binding domain of a nuclear receptor.

Claim 49 (previously presented): The cell culture of Claim 48, wherein the nuclear receptor is selected from the group consisting of an estrogen receptor, an androgen receptor, a progesterone receptor, a glucocorticoid receptor, a thyroid hormone receptor, a retinoid receptor, and an ecdysone receptor

Claim 50 (currently amended): The cell culture of claim 23, wherein the neural precursor cells are derived from central nervous system tissue selected from the group consisting of hippocampus, cerebral cortex, striatum, septum, ~~diencephalon, mesencephalon,~~ hindbrain, and spinal cord.

Claim 51 (currently amended): A method for producing a culture comprising a mammalian neural precursor cell line wherein ~~at least about 20% a portion~~ of the cell line is capable of differentiating into neurons, comprising:

- a) preparing a culture comprising at least one neural precursor cell in a medium including a first mitogen selected from the group consisting of aFGF, bFGF, EGF, TGF α and combinations thereof;
- b) introducing into the neural precursor cell in the medium including the first mitogen a recombinant DNA construct comprising a receptor ligand-regulated *c-myc* gene, wherein ~~at least a portion of the~~ *c-myc* DNA is fused with DNA encoding ~~at least a portion of a~~ ligand-binding domain of a nuclear receptor; and
- c) ~~culturing-expanding the~~ neural precursor cell including the *c-myc* construct in a medium containing the first mitogen and a second mitogen into a cell line that resists differentiation in media containing a mitogen,

wherein said second mitogen is selected from the group consisting of aFGF, bFGF, EGF, TGF α , serum and combinations thereof, and

wherein said medium containing the first mitogen and the second mitogen further comprises a *c-myc*-activating agent capable of binding to the ligand-binding domain.

Claim 52 (previously presented): The method of Claim 51, wherein the neural precursor cell is derived from a human.

Claim 53 (canceled):

Claim 54 (previously presented): The method of claim 51, wherein the neural precursor cell is derived from pluripotent embryonic stem cells.

Claim 55 (previously presented): The method of claim 51, wherein the neural precursor cell is derived from central nervous system tissue.

Claim 56 (currently amended): The method of claim 51, wherein the central nervous system tissue is selected from the group consisting of hippocampus, cerebral cortex, striatum, septum, ~~diencephalon, mesencephalon,~~ hindbrain, and spinal cord.

Claim 57 (canceled):

Claim 58 (previously presented): The method of claim 51, wherein the second mitogen is different from the first mitogen.

Claim 59 (previously presented): The method of claim 51, wherein the nuclear receptor is selected from the group consisting of an estrogen receptor, an androgen receptor, a progesterone receptor, a glucocorticoid receptor, a thyroid hormone receptor, a retinoid receptor, and an ecdysone receptor.

Claim 60 (previously presented): The method of claim 51, wherein the *c-myc*-activating agent is selected from the group consisting of β -estradiol, RU38486, dexamethasone, thyroid hormones, retinoids, and ecdysone.

Claim 61 (previously presented): The method of Claim 51, further comprising introducing a selectable marker into the neural precursor cell.

Claim 62 (currently amended): The method of Claim 51, further comprising culturing the neural precursor cell in the presence of ~~unmodified~~ feeder cells.

Claim 63 (currently amended): The method of Claim 62, wherein the ~~unmodified~~ feeder cells are selected from the group consisting of unmodified primary stem cells, immature glial cells, mature astrocytes, fibroblasts, neurons and mitotically-inhibited cells.

Claim 64 (currently amended): A method of obtaining a culture comprising a neural precursor cell line of a mammal capable of expanding through at least thirty cell doublings and wherein ~~at least about 20%~~ a portion of the cell line is capable of differentiating into neurons comprising:

a) preparing a culture comprising at least one neural precursor cell, wherein said culture includes a first mitogen selected from the group consisting of aFGF, bFGF, EGF, TGF α and combinations thereof;

b) modifying said neural precursor cell to express a chimeric *c-myc* protein comprising a *c-myc* protein fused with at least one nuclear receptor protein such that the modified cell resists differentiation in a medium containing a mitogen; and

c) culturing the undifferentiated modified neural precursor cells in a medium comprising the first mitogen and a myc-activating agent.

Claim 65 (canceled)

Claim 66 (previously presented): The method of claim 64, wherein the neural precursor cell is derived from central nervous system tissue.

Claim 67 (currently amended): The method of claim 66, wherein the central nervous system tissue is selected from the group consisting of hippocampus, cerebral cortex, striatum, septum, ~~dienecephalon, mesencephalon,~~ hindbrain, and spinal cord.

Claim 68 (canceled):

Claim 69 (previously presented): The method of Claim 64, wherein the nuclear receptor protein is selected from the group consisting of an estrogen receptor, an androgen receptor, a progesterone receptor, a glucocorticoid receptor, a thyroid hormone receptor, a retinoid receptor, and an ecdysone receptor

Claim 70 (previously presented): The method of Claim 64, wherein the myc-activating agent is selected from the group consisting of β -estradiol, RU38486, dexamethasone, thyroid hormones, retinoids, and ecdysone.

Claim 71 (previously presented): The method of Claim 64, which includes withdrawing the first mitogen and the myc-activating agent to initiate differentiation of the expanded culture of neural precursor cells.

Claim 72 (currently amended): A cell culture comprising:
at least one neural precursor cell of a mammal, wherein said cell:

- (a) is transfected with a ~~proto-oncogene~~ myc DNA;
- (b) ~~maintains the multipotential capacity to differentiate into a neuron or glia~~ resists differentiation through at least thirty cell doublings of said cell when grown in medium containing a mitogen; and
- (c) differentiates into a neuron or glia upon withdrawal of a mitogen.

Claim 73 (currently amended): The cell culture of Claim 72, which includes a clonal cell culture line.

Claim 74 (previously presented): The cell culture of Claim 72, wherein the neural precursor cell is a neural stem cell.

Claim 75 (previously presented): The cell culture of claim 72, wherein the cell is derived from central nervous system tissue.

Claim 76 (currently amended): The neural precursor cell culture of claim 75, wherein the central nervous system tissue is selected from the group consisting of hippocampus, cerebral cortex, striatum, septum, ~~diencephalon, mesencephalon,~~ hindbrain, and spinal cord

Claim 77 (previously presented): The cell culture of Claim 72, wherein the proto-oncogene includes at least a portion of *c-myc*.

Claim 78 – 80 (canceled):